Amendment to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

What is claimed is:

1. (Currently amended) A variable engine valve control system with pressure difference comprising a hydraulic supply equipment~~—1~~, a hydraulic actuator apparatus ~~5~~, a valve ~~6~~ and a spring ~~4—~~for controlling piston balance; said hydraulic actuator ~~5~~ includes a hydraulic cylinder ~~51~~, a piston ~~52~~ and a piston rod ~~53~~; said piston rod ~~53~~ is coupled and moved with said valve ~~6~~; wherein said piston divides said hydraulic cylinder into a upper chamber and a lower chamber; said hydraulic supply equipment ~~1—~~is connected with said upper chamber of said hydraulic cylinder ~~51~~ through a general fluid inlet pipe~~—14~~, and said lower chamber of the said hydraulic cylinder is connected with said hydraulic supply equipment ~~1~~ through a pressure difference proportional relief valve ~~2~~.

2. (Currently amended) The variable engine valve control system with pressure difference according to Claim 1 wherein said pressure difference proportional relief valve can be a pressure difference feedback control spool valve 2a which includes a valve body ~~22~~, spool valve core ~~21~~, proportional electromagnet, as well as fluid inlet port (A), fluid outlet port (B) and fluid drain port (T) on said valve body; said valve body ~~22~~ is equipped with a horizontally-arranged transverse passage ~~222~~ matched with said spool valve core; On said spool valve core ~~21~~ is equipped with a column boss ~~211~~ which can move with said spool valve core, thereby close or open the control fluid port(c-c) of said column boss ~~211—~~connected with a fluid drain port (T); One end of said spool valve core is concentrically contact with the crown bar ~~25~~ of said proportional electromagnet; The other end of said spool valve core is supported to a spring ~~23~~; on the left side of said valve body ~~22~~ there is a left side passage ~~223~~ connected with the upper chamber of said hydraulic cylinder and said hydraulic supply equipment ~~1~~ through said fluid inlet port(A); on the central position of said valve body there is a longitudinal passage ~~225~~ connected to said transverse passage ~~222~~ and connected with the lower chamber of said hydraulic cylinder through said fluid outlet port (B); there is a damping passage ~~224~~ with damping between said left side passage ~~223~~ and said longitudinal passage ~~225~~; the upper

end of said longitudinal passage ~~225~~ is connected to the left end of a right upper side passage ~~221~~ of said valve body; The right end of said right upper side passage is connected with a right end passage ~~227~~ of said valve body; at the right lower side of said valve body is situated a right lower side passage ~~226~~ with its one end connected with said fluid drain port (T) and its other end connected with said transverse passage.

3. (Currently amended) The variable engine valve control system with pressure difference according to Claim 2 wherein the damping in said damping passage ~~224~~ is a damping aperture ~~24~~.

4. (Currently amended) The variable engine valve control system with pressure difference according to Claim 2 wherein the damping in said damping passage is formed by a second throttle side (c2) between said column boss and said valve body ~~22~~.

5. (Currently amended) The variable engine valve control system with pressure difference according to Claim 2 ~~or 3 or 4~~ wherein a thinner bar ~~212~~ projecting out of said valve body ~~22~~ with sealing is installed at the both ends of said spool valve core ~~21~~; the crown bar ~~25~~ of said proportional electromagnet is supported to a slender bar at its relative end.

6. (Currently amended) The variable engine valve control system with pressure difference according to Claim 1 ~~or 2 or 3~~ wherein a hydraulically-controlled check valve ~~9~~ in parallel with said pressure difference proportional relief valve ~~2~~ can be situated between the upper chamber of said hydraulic cylinder and the lower chamber of said hydraulic cylinder, which causes hydraulic fluid to enter into the lower chamber of said hydraulic cylinder from the upper chamber of said hydraulic cylinder.

7. (Currently amended) The variable engine valve control system with pressure difference according to Claim 1 ~~or 2 or 3 or 4~~ wherein a protrusion is placed on

the top of said piston ~~52~~, correspondingly, a buffering chamber ~~56~~ is coupled with said protrusion on the top cover of said hydraulic cylinder ~~51~~, and a fluid passage ~~59~~ is situated in the hydraulic cylinder with its one end connected with said buffering chamber ~~56~~ and the other end of said fluid passage ~~59~~ connected with said hydraulic supply equipment ~~1~~ through a first check valve.

8. (Currently amended) The variable engine valve control system with pressure difference according to Claim 1 ~~or 2 or 3 or 4~~ wherein a second check valve ~~10~~ is yet installed on said general fluid inlet pipe ~~14~~ for preventing the fluid of said upper chamber of hydraulic cylinder from flowing toward said hydraulic supply equipment ~~1~~.

9. (Currently amended) The variable engine valve control system with pressure difference according to Claim 1 ~~or 2 or 3 or4~~ wherein a pressure accumulator ~~3~~ can be mounted on said general fluid inlet pipe ~~14~~.

10. (Currently amended) The variable engine valve control system with pressure difference according to Claim 1 ~~or 2 or 3 or 4~~ wherein on said piston end surface opposed to said piston rod ~~53~~, an auxiliary piston rod ~~54~~ can be fitted coaxially with the piston rod projecting out of said hydraulic cylinder ~~51~~, said spring ~~4~~ can be sleeved round, said auxiliary piston rod ~~54~~ outside of said hydraulic cylinder.

11. (Currently amended) The variable engine valve control system with pressure difference according to Claim 1 ~~or 2 or 3 or 4~~ wherein said spring ~~4~~ can be sleeved round the piston rod ~~53~~ outside of said hydraulic cylinder.

12. (Currently amended) A variable engine valve control system with pressure difference comprising a hydraulic supply equipment 1, a hydraulic actuator apparatus ~~5~~, a valve ~~6~~ and a spring ~~4~~ for controlling piston balance, said hydraulic actuator apparatus ~~5~~ comprises a hydraulic cylinder ~~51~~, a piston ~~52~~ and a piston rod ~~53~~; said piston rod ~~53~~ is coupled and moved with the valve ~~6~~, wherein said piston ~~52~~ divides said hydraulic cylinder ~~51~~ into a upper chamber

and a lower chamber, said upper chamber and said lower chamber are connected with the first fluid port (A1) and the second fluid port (B1) existing pressure difference therein of a pressure difference proportional relief valve respectively through a fluid inlet pipe ~~16~~ and a fluid outlet pipe ~~15~~; said hydraulic supply equipment ~~1~~ is connected with the fluid inlet port C of said pressure difference proportional relief valve ~~2~~ through a general fluid inlet pipe ~~14~~.

13. (Currently amended) The variable engine valve control system with pressure difference according to Claim 12 wherein said pressure difference proportional relief valve is a pressure difference feedback cone valve ~~2d~~ which includes a cone valve body ~~22d~~, a cone valve core ~~21d~~, a proportional electromagnet, said fluid inlet port(C), said first fluid port (A1) and said second fluid port (B1) positioned in said cone valve body; the cone valve core head is equipped with a conoid ~~211d~~ matched with the rear end port of a cone valve body bore ~~221d~~ and its tail is supported to the crown bar of said proportional electromagnet, and a spring is sleeved round the said cone valve core with its one end supported to the cone valve body ~~22d~~, its other end supported to the conoid ~~211d~~ end surface; said fluid inlet port (C) and said first fluid port A1 are respectively connected with the front and rear ends ports of the cone valve body bore ~~221d~~; between the second fluid port (B1) and the first fluid port (A1) is fitted with a passage with a damping aperture ~~24d~~; the second fluid port B1 yet is connected with a fluid tank.

14. (Currently amended) The variable engine valve control system with pressure difference according to Claim 12 wherein a protrusion is placed on the top of said piston ~~52~~, relatively, a buffering chamber ~~56~~ is coupled with the protrusion on the top cover of said hydraulic cylinder ~~51~~, and an fluid passage ~~59~~ is placed in said hydraulic cylinder with its one end connected with said buffering chamber and its other end connected with said hydraulic supply equipment ~~1~~ through a first check valve ~~7~~.

15. (Currently amended) The variable engine valve control system with pressure difference according to Claim 12 wherein a hydraulically –controlled check valve ~~9~~ in parallel with said pressure difference proportional relief valve ~~2~~ can be situated between the upper chamber of said hydraulic cylinder and the lower chamber of said hydraulic cylinder, which cause hydraulic fluid to enter into the lower chamber of the hydraulic cylinder from the upper chamber of the hydraulic cylinder.

16. (Currently amended) The variable engine valve control system with pressure difference according to Claim 12 wherein a pressure accumulator ~~3~~ is installed on said general fluid inlet pipe ~~14~~.

17. (Currently amended) The variable engine valve control system with pressure difference according to Claim 12 ~~or 16~~ wherein on the piston end surface opposed to the piston rod ~~53~~ an auxiliary piston rod ~~54~~ is fitted coaxially with said piston rod projecting out of said hydraulic cylinder ~~51~~; said spring ~~4~~ is sleeved round said auxiliary piston rod ~~54~~ at the outside of said hydraulic cylinder.

18. (Currently amended) The variable engine valve control system with pressure difference according Claim 12 ~~or 16~~ wherein said spring ~~4~~ is sleeved round said piston rod ~~53~~ at the outside of said hydraulic cylinder.

19. (New) The variable engine valve control system with pressure difference according to Claim 4 wherein a thinner bar projecting out of said valve body with sealing is installed at the both ends of said spool valve core; the crown bar of said proportional electromagnet is supported to a slender bar at its relative end.

20. (New) The variable engine valve control system with pressure difference according to Claim 3 wherein a hydraulically–controlled check valve in parallel with said pressure difference proportional relief valve can be situated between

the upper chamber of said hydraulic cylinder and the lower chamber of said hydraulic cylinder, which causes hydraulic fluid to enter into the lower chamber of said hydraulic cylinder from the upper chamber of said hydraulic cylinder.